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DECEMBER 11, 1991

TO:MR. DAVID CROXTON
HW-106
REGION 10, U.S. EPA.
SEATTLE, WA 98101

ENFORCEMENT SENSITIVE

FILE COPY

FROM:ROBERT FARRELL
AUGUSTA, MAINE 04330

SUBJECT: CHEMPRO-PIER 91 WORK PLAN-REVIEW OF PORT'S COMMENTS OF DECEMBER 11, 1990

The review has followed the page numbers of the Port's letter. Almost all of the comments by the Port are agreed with. Concerns about some of the Port's comments are expressed. My concerns are based on the November, 1990 review of Chempro's work plan and supporting data.

A-9: 1)It is agreed that a summary of the results of previous investigation is necessary besides just SE/E review.

2)This paragraph agrees with the November, 1990 review of the work plan (Pg. 3).

A-10:At every site that I have reviewed that SE/E has investigated they have defined a shallow aquitard that they claim underlies the entire site area (Chempro-Washougal, TEK, Cascade Wood, Chempro-Georgetown). It is not clear that SE/E fully understands the implication of calling a strata an aquitard. Common practice usually considers a layer to be an aquitard if it has two orders of magnitude lower hydraulic conductivity than the aquifer(s) it bounds. Aquitard allow some leakage. Ground water flow paths in the aquifers above and/or below an aquitard tend to be parallel to the contact between the aquifer and the aquitard. As the Port points out in its item A-10 there is not a two orders of magnitude difference in hydraulic conductivity between the layers that have been defined as aquifers and the layer that has been defined as an aquatard.

TABLE A-1: It is agreed that new shallow wells and deep wells are needed downgradient of the O/W separator. As was pointed out in the November, 1990 review, the March, 1990 ground water contour map (figure 2) indicates there are no wells located downgradient of the O/W separator. The proposed location of CP-112 may be too far to the west of the flow paths from the O/W separator to intercept contaminates if they exist down gradient of the O/W separator.

CP-120 there not down gradient move it a little.

Big Yard Tanks-ground water-From the analyzes of the data for

the November, 1990 review, it is not clear that an upgradient well is warranted east of the Big Yard Tank area. It is agreed that CP-103 should be sampled but it should be recognized that the March, 1990 water level data suggests that ground water flow at this well is from off site to the southeast.

Small Yard Tanks-It is recommended that CP-116 be sampled downgradient of this unit.

Waste Oil Spill Area-Ground water sampling-CP-109 is not downgradient of the spill area. CP-107 is more likely to be downgradient of the pipe alley drainage area. CP-110 is downgradient of the big yard tank area not the spill area. There is a need for a new well between CP-107 and CP-110 that will monitor the flow paths from the spill area. Wells CP 118 and 119 should be included in the monitoring of the spill area as well as monitoring the diesel yard tanks.

☆-why not 118 + 119 109, 110

Pipe Alley Drainage Area-CP-120 is not downgradient of the pipe alley drainage area but is upgradient of the O/W separator and pipe alley drainage area. Wells CP-107, CP-118, and CP-119 are downgradient of the pipe alley drainage area.

Warehouse Area- Wells CP-104, CP-112, and CP-115 may be down gradient of the warehouse area. However, CP-115 is at the edge of the downgradient area. CP-120 and CP-104 are 100 feet downgradient of the warehouse. If there are significant vertical ground water flow paths from the warehouse area, ground water flow may be under these proposed shallow wells. Not enough is known about the deep aquifer flow to know if deep wells would be down gradient.

C-3: It is agreed that there is a lack of supporting data on the deeper aquifer.

TABLE C-1: 2)In general the Port's comment is agreed with. It is believed, however, that Chempro should hold off drilling a deep well down gradient of the O/W separator until the aquitard is better understood and characterized. ☆

6)From the data that is available to me it is not clear where they are referring to.

C-9: It is agreed that there is a need for a well inventory and survey of the uses made of the ground water in the area.

TABLE C-5: The use of filtered samples is not agreed with as long a there is a comparison made to background water quality in the same strata. ☆